



# THE NATURALIST.

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## AEROSTATION.

AEROSTATION, in the modern application of the term, signifies the art of navigating through the air, both in its principles and practice. Hence also the machines which are employed for this purpose, are called aerostats, or aerostatic machines ; and, on account of their round figure, air balloons. In 1729, Bartholomew Gusman, a Jesuit, of Lisbon, caused an aerostatic machine, in the form of a bird, to be constructed ; and made it to ascend, by means of a fire kindled under it, in the presence of the king, queen, and a great concourse of spectators. Unfortunately, in rising, it struck against a cornice, was torn, and fell to the ground. The inventor proposed renewing his experiment ; but the people had denounced him to the inquisition as a sorcerer, and he withdrew into Spain, where he died in an hospital. In 1766, the Honorable Henry Cavendish discovered that inflammable air (*hydrogen gas*) was at least seven times as light as the common air. It soon afterwards occurred to the celebrated Dr. Black, that if a thin bag were filled with this gaseous substance, it would, according to the established laws of specific gravity, rise in the common atmosphere ; but he did not pursue the inquiry. The same idea was next conceived by Mr. Cavallo, to whom is generally ascribed the honor of commencing the experiments on this subject. He had made but little progress, however, in these experiments, when the discovery of Stephen and John Montgolfier, paper manufacturers of France, was announced in 1782, and engaged the attention of the philosophical world. Observing the natural ascent of

smoke and clouds in the atmosphere, those artists were led to suppose that heated air, if inclosed in a suitable covering, would also prove buoyant. Accordingly, after several smaller experiments, by which this idea was fully confirmed, they inflated a large balloon with rarefied air, on the fifth of June, 1783, which immediately and rapidly rose to the height of six thousand feet, and answered their most sanguine expectations.

It was soon found that machines of this kind might be so contrived as to convey small animals and even human beings, through the air with ease. The first human adventurer in this aerial navigation was M. Pilatre de Rozier, a daring Frenchman, who rose in a large balloon, from a garden in the city of Paris, on the 15th of October, 1783, and remained a considerable time suspended in the air. He made several aerial voyages of greater extent afterwards, and in two of them was attended by other persons. In a short time, however, the use of rarefied air in aerostation was, for the most part, laid aside, as inconvenient and unsafe. On recurring once more to the discovery of Mr. Cavendish, the philosophers of Paris concluded that a balloon inflated with inflammable air would answer all the purposes of that contrived by the Montgolfiers, and would also possess several additional advantages. They made their first experiment on the 23d of August, 1783, which was attended with complete success. The first human beings who ventured to ascend in a balloon raised upon this plan were Messrs. Charles and Roberts, who rose from Paris, on the 1st day of December in the same year. The inflammable air balloons have been generally used since that time.

The first aerial voyage in England was performed in London, on the 15th of September, 1784, by Vincent Lunardi, a native of Italy. His balloon was made of oiled silk, painted in alternate stripes of blue and red. Its diameter was thirty-three feet. From a net which went over two-thirds of the balloon, descended forty-five cords to a hoop hanging below the balloon, and to which the gallery was attached. The balloon had no valve; and its neck which terminated in the form of a pear, was the aperture through which the inflammable air was introduced, and through which it might be let out. The air for filling the balloon was produced from zinc by means of vitriolic acid. M. Lunardi departed from the artillery ground at two o'clock; and with him were a dog, a cat, and a pigeon. After throwing out some sand, to clear the houses, he ascended to a great height. The direction of his motion was at first north west by west; but as the balloon rose higher, it fell into another current of air, which carried it nearly north. About half after three he descended very near the ground, and

landed the cat, which was almost dead with cold ; then rising, he prosecuted his voyage. He ascribes his descent to the action of an oar ; but as he was under the necessity of throwing out ballast in order to reascend, his descent was more probably occasioned by the loss of inflammable air. At ten minutes past four he descended on a meadow, near Ware, in Hertfordshire. The only philosophical instrument which he carried with him was a thermometer, which in the course of his voyage stood as low as  $29^{\circ}$ , and he observed that the drops of water which collected round the balloon were frozen.

The largest and the most interesting voyage, which was performed about this time, was that of Messrs. Roberts and Mr. Collin. Hullin, at Paris, on the 19th of September, 1784. Their aerostat was filled with inflammable air. Its diameter was twenty-seven feet and three-quarters, and its length was forty-six feet and three-quarters, and it was made to float with its longest part parallel to the horizon, with a boat nearly seventeen feet long attached to a net that went over it as far as its middle. To the boat were annexed wings, or oars, in the form of an umbrella. At twelve o'clock they ascended, with four hundred and fifty pounds of ballast, and after various manœuvres descended at forty minutes past six o'clock near Arras, in Artois, having still two hundred pounds of their ballast remaining in the boat. Having risen about one thousand four hundred feet, they perceived stormy clouds, which they endeavored to avoid, but the current of air was uniform from the height of six hundred to four thousand two hundred feet. The barometer on the coast of the sea was 29.61 inches, and sunk to 23.94 inches. They found that by working with their oars they accelerated their course. In the prosecution of their voyage, which was one hundred and fifty miles, they heard two claps of thunder ; and the cold occasioned by the approach of stormy clouds made the thermometer fall from seventy-seven degrees to fifty-nine degrees, and condensed the inflammable air in the balloon, so as to make it descend very low. From some experiments, they concluded that they were able by the use of two oars to deviate from the direction of the wind about twenty-two degrees. But this experiment requires repetition, in order to ascertain with accuracy the effect here ascribed to oars.

The second aerial voyage in England was performed by Mr. Blanchard and Mr. Shelton, professor of anatomy to the Royal Academy, the first Englishmen who ascended with an aerostatic machine. This experiment was performed at Chelsea on the 16th of October, 1784. The wings used on this occasion seemed to have produced no deviation in the machine's track from the di-

rection of the wind. Mr. Blanchard, having landed his friend about the distance of fourteen miles from Chelsea, proceeded along with different currents, and ascended so high as to experience great difficulty of breathing. A pigeon also, which flew away from the boat, labored for some time with its wings, in order to sustain itself in the rarefied air, and after wandering for a considerable time, returned and rested on one side of the boat. Mr. Blanchard perceiving the sea before him, descended near Rumsey, about seventy-five miles from London, having travelled at the rate of nearly twenty miles an hour. The fate of M. P. de Rozier, the first aerial navigator, and of his companion M. Romain, has been much lamented. They ascended at Bologne, on July 15, 1785, with an intention of crossing the channel to England. Their machine consisted of a spherical balloon, thirty-seven feet in diameter, filled with inflammable air, and under this balloon was suspended a small montgolfier, or fire balloon, ten feet in diameter. This montgolfier was designed for rarefying the atmospheric air, and thus diminishing the specific gravity of the whole apparatus. For the first twenty minutes they seemed to pursue the proper course; but the balloon appeared to be much inflated, and the aeronauts appeared anxious to descend. Soon, however, when they were at the height of about three-quarters of a mile, the whole apparatus was in flames, and the unfortunate adventurers fell to the ground, and were killed on the spot.

On the 19th of July, 1785, Mr. Crosbie ascended at Dublin, with a view of crossing the channel to England. To a wicker basket of a circular form, which he had substituted for the boat, he had affixed a number of bladders, for the purpose of rendering his gallery buoyant, in case of a disaster at sea. The height to which he ascended at one time was such, that by the intense cold, his ink was frozen, and the mercury sunk into the ball of the thermometer. He himself was sick, and he felt a strong impression on the tympanum of his ears. At his utmost elevation he thought himself stationary; but on discharging some gas he descended to a very rough current of air blowing to the north. He then entered a dense cloud, and experienced strong blasts of wind, with thunder and lightning, which brought him with rapidity towards the surface of the water. The water soon entered his car; the force of the wind plunged him into the ocean, and it was with difficulty that he put on his cork jacket. The bladders which he had prepared were now found of great use. The water, added to his own weight, served as ballast; and the balloon maintaining its poise, answered the purpose of a sail, by means of which, and a snatch block to his car, he moved before the wind as regularly

as a sailing boat. He was at length overtaken by some vessels who were crowding sail after him, and conveyed to Dunleary with the balloon. On the 22d of July, Major Morey, who ascended at Norwich, was driven out to sea, and after having been blown about for nearly two hours, he dropped into the water. After much exertion for preserving his life, and when he was almost despairing of relief, he was taken up by a revenue cutter in a state of extreme weakness; having been struggling to keep himself above water for about seven hours.

The longest voyage that had been hitherto made was performed by Mr. Blanchard, towards the end of August, 1785. He ascended at Lisle, accompanied by the Chevalier de l'Epinaud, and traversed a distance of three hundred miles before they descended. On this, as well as on other occasions, Mr. Blanchard made trial of a parachute, in the form of a large umbrella, which he contrived for breaking his fall in case of any accident. With this machine he let down a dog, which came to the ground gently and unhurt. On the 8th of September, Mr. Baldwin ascended from the city of Chester, and performed an aerial voyage of twenty-five miles in two hours and a quarter. His greatest elevation was about a mile and a half, and he supposed that the velocity of his motion was sometimes at the rate of twenty miles an hour. He has published a circumstantial account of his voyage; described the appearances of the clouds as he passed through them; and annexed a variety of observations relating to aerostation. The science of aerostation is much indebted to the skill and intrepidity of this celebrated aeronaut.

The singular experiment of ascending into the atmosphere with a balloon, and of descending with a machine called a parachute, was performed by Mr. Garnerin, on the 21st of September, 1802. He ascended from St. George's parade, North Audley Street, and descended safe into a field near the small pox hospital, at Pancras. The balloon began to be filled about two o'clock. At six, the balloon being quite full of gas, and the parachute, &c. being attached to it, Mr. Garnerin placed himself in the basket, and ascended majestically amidst the acclamations of innumerable spectators. The weather was the clearest and pleasantest imaginable; the wind was gentle, and about west by south; in consequence of which Mr. Garnerin went into the direction of nearly east by north. In about eight minutes, the balloon and parachute had ascended to an immense height, and Mr. Garnerin, in the basket, could scarcely be perceived. While every spectator was contemplating the grand sight before them, Mr. Garnerin cut the rope, and in an instant he was separated from the balloon, trusting his safety to

the parachute. At first, viz., before the parachute opened, he fell with great velocity ; but as soon as the parachute was expanded, which took place a few moments after, the descent became very gentle and gradual. A remarkable circumstance was observed ; namely, that the parachute, with the appendage of cords and basket soon began to vibrate like the pendulum of a clock, and the vibrations were so great, that more than once the parachute, and the basket with Mr. Garnerin, seemed to be on the same level, or quite horizontal : however, the extent of the vibrations diminished as he descended. On coming to the earth, Mr. Garnerin experienced some pretty strong shocks ; but he soon recovered his spirits, and remained without any material hurt. As soon as the parachute was separated from the balloon, the latter ascended with great rapidity, and, being of an oval form, turned itself with its longer axis into an horizontal position.

The air balloon is an hydrostatic machine that consists of a bag filled with air, so light, that the whole is specifically lighter than the common air of the atmosphere. Fig. 2. Plate X. It is, in fact, a vessel filled with a fluid which will float in another fluid—air in air. *There are two kinds of balloons* ; those raised with rarefied, and those filled with inflammable air. And the best forms for balloons are of a globe, and an egg-like figure. Large balloons, for inflammable air, must be made of silk, and varnished over, so as to be air tight. The car, or boat of a balloon, is made of wicker work covered with leather, and well varnished, or painted, and is suspended by ropes proceeding from the net which goes over the balloon. The inflammable air for filling the balloon is procured by putting a quantity of iron filings, or turnings, with some oil of vitriol diluted with water, into casks lined with lead. From the top of these casks tin tubes proceed, which unite into one that is connected with the silk tube of the balloon. As represented by Fig. 1. Plate X. Balloons cannot be made smaller than five or six feet in diameter, of oiled silk, as the weight of the material is too great for the air to buoy it up. They may be made smaller of thin stripes of bladder or other membrane, glued together.

The first principles of the science of aerostation have been long and generally known, though the application of them to practice seems to be altogether a modern discovery. The invention of balloons, though far-famed and brilliant, cannot be considered as having hitherto added much to the comfort or utility of man. The only practical purposes which it has been made to subserve, are those of aiding in meteorological inquiries, and inspecting the fortifications and reconnoitring the camp of an enemy, which could

not be approached by other means. It has been applied to this latter purpose in at least one, if not more instances, by the French engineers, during the late war. But who can undertake to assign the limits beyond which the ingenuity and the enterprise of man shall not pass ? Though this species of navigation labors under difficulties which appear at present insurmountable ; though the want of some means to control and regulate the movements of the aerial vessel is so essential as to excite a fear that it cannot be supplied ; yet who can tell what further experience and discoveries may produce ? Who can tell but another century may give rise to such improvements, that navigating the air may be as safe, as easy, and rendered subservient to as many practical purposes as navigating the ocean ? It must be acknowledged, indeed, that this is not very probable ; but things more unexpected, and more remote from our habits of thinking, have doubtless occurred.

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## ORNITHOLOGY.

### NO. IX.

**MIGRATION OF BIRDS.** Birds without the means of conveying themselves with great swiftness from one place to another, could not easily subsist with the food which nature has provided for them, being so irregularly distributed that they are obliged to take long journeys to distant parts, in order to procure the necessary supplies. Hence one cause of those migrations which are so peculiar to the feathered race. Besides the want of food, however, two other causes may be assigned, namely, the want of a proper temperature of air, and of a convenient situation for the important work of breeding their young. Such birds as migrate to great distances are denominated *birds of passage* ; but most species are more or less so, although they do not move to places remote from their former habitations. At particular periods of the year, most birds remove from one country to another, or from the more inland districts towards the shores, or *vice versa*. The seasons of these migrations are observed with the most astonishing regularity, and punctuality ; but the secrecy, with which immense flocks take their departure, and the suddenness with which they appear, are not easily explained.



## THE HOARY PARROT.

*Psittacus erythacus.*

" " Lord, how he nicks us " Tom More cries ;  
 " Lord how he nicks us " Poll replies.  
 Tom throws, and eyes the glittering store,  
 And as he throws, exclaims " Tom More."  
 " Tom More," the mimic bird replies.  
 The astonished gamblers lift their eyes,  
 And wondering stare and look around,  
 As doubtful whence proceeds the sound.

THIS splendid and numerous genus, to which this bird belongs, is chiefly confined to the warmer regions of both continents, or within the limits of the tropics ; none being natives of Europe. Some few are found in latitudes far beyond what was supposed by Buffon, and even as far as  $40^{\circ}$  or  $45^{\circ}$  on each side of the equator. They are remarkable for their active and imitative disposition. From the peculiar form of their tongue, which in most species, is thick, flattish, rounded, and fleshy, they are enabled to articulate with greater distinctness than other birds. The upper mandible is movable ; and the feet formed for climbing, with a power of bringing forward, at pleasure, one of the hind toes. They deposit their eggs, which are generally two, in the holes of decayed trees. Though usually observed in pairs, they sometimes assemble in vast flocks. The whole genus, according to Gmelin, comprehends about 170 species.

The hoary parrot is generally preferred on account of the mildness of its disposition and of its remarkable sagacity and docility, in which it at least equals the green parrot, without the disagreeable cries. Its temples are naked and white ; and its tail cochineal or scarlet ; the head is cinerous and its cheeks are naked ; the primary quill feathers are of a brown-ash color. There are three varieties, the *red*, the *red-winged*, and the *red-variegated*, all natives of Africa, and about twenty inches long. It is sometimes called *Jaco*, from one of its most frequent sounds which it utters. It is said to have been first brought into Europe by Alexander the Great.

Most of these parrots are imported from the coast of Guinea, and come from the interior parts of Africa. They are also found at Congo, and on the south of Angola. They are very easily taught to speak, and seem fondest of imitating the voice of children, who are also the most successful in training them. It has, indeed, been remarked by old writers that the birds most suscep-



able of imitating the human voice are eager to listen to children, whose articulation is imperfect and unequal, and therefore more correspondent to their own. But the hoary parrot copies also the deep tones of the adult ; though the effort is laborious, and the words are less distinct. One of these birds was so completely drilled by an old sailor, that it acquired exactly his hoarse voice and cough ; and though it was afterwards committed to a young person, and was in no other company, it never forgot the lessons of its first teacher, and it was amusing to observe its transitions from a soft gracious note to its former hoarseness and coarse marine tones.

But not only has this bird a facility to articulate words, it has also an eagerness in imitating the human voice. It listens with attention, and strives to repeat ; it dwells constantly on some syllables which it has heard, and seeks to surpass every other voice by the loudness of its own. We are often surprised at its repeating words or sounds, which we never taught it. Aldrovandus gives an account of a parrot belonging to Henry VIII. which was generally kept in a room, the window of which overlooked the Thames. It had learned several phrases which it had heard the boatmen and passengers repeat. One day while playing on its perch it unfortunately fell into the river. No sooner was it apprised of the danger of its situation than it screamed loudly, *A boat ! A boat ! Twenty pounds to save me !* A boatman passing by, thought it to be a person, and precipitated himself into the water, to save, as he thought, some one drowning. But on taking it out he discovered it to be the parrot belonging to the king. He accordingly carried it to the palace of the king, demanding the twenty pounds for his reward. The story being related, the king cordially fulfilled his parrot's promise.

About forty years ago, a very essential discovery was detected at Dublin, by means of a parrot. The Lord Mayor, with his suit, enforced a law of entering, unexpectedly, all the shops of that city so as to examine the goods, weights, measures, &c. Having once visited the shop of a baker, and the weight of the loaves found just, they were well satisfied and were leaving the shop, when a parrot that was in a cage, fastened at the window, vociferated, *Look in the cabinet ! Look in the cabinet !* On hearing this the Lord Mayor and his suit entered a small room which they had overlooked, in which several loaves were found that were of unjust weight. They were immediately carried away and the baker punished.

The parrot seems to set itself tasks, and tries every day to retain its lesson. Cardan goes so far as to ascribe to it meditation

and inward reflection on what it had been taught, 'and this,' says he, 'through emulation and the love of glory.' The love of the marvellous must have had mighty influence upon this philosopher, to make him advance such absurdities. Its attention is engaged even in sleep, and, according to Marcgrave, it prattles in its dreams, which caused Aristotle to inquire whether animals hatched from eggs ever dream? Marcgrave answered, that, 'his parrot, Laura, often rose in the night and prattled half asleep.' Parrots are most capable of improvement when young; then they show more sagacity, more docility; and their memory, if early cultivated, sometimes becomes astonishing. Rhodiginus mentions a parrot which a Cardinal purchased for 100 crowns, because it recited correctly the Apostles' creed. And M. de la Borde tells us that he saw one which served as almoner on board of a vessel; it recited the sailor's prayer, then the rosary. But when it grows older, it becomes stubborn, and will hardly be taught. Olinia recommends the evening, after their meal, as the proper time to instruct them; for their wants being satisfied, they are then more docile and attentive.

The education of the parrot has been compared to that of a child. At Rome, a person who trained a parrot held in his hand a small rod, with which he struck it on the head. Pliny says that its skull is very hard, and that it requires smart blows to make it feel. However, the bird to which we allude feared the rod more than a child, that had been often whipped. If after remaining perched all day, it anticipated the hour of walking out into the garden, and descended too soon (which seldom happened) threats and the sight of the rod drove it with precipitation to its roost; there it continued, but showed its impatience by flapping its wings and screaming.

Parrots of this kind not only imitate discourse, but they mimic gestures and actions. Scaliger saw one that performed the dance of the Savoyards, at the same time repeating their song. One mentioned by Madame Nadault, was pleased to hear a person sing, and, when it saw him dance, it also tried to caper, but with the worst grace imaginable, holding in its toes, and tumbling back clumsily. It was then the most cheerful; but it had also an extravagant joy, and an incessant prattling when in the state of intoxication; for all parrots love wine, particularly the Spanish and the muscadine. Even in the time of Pliny it was remarked that the fumes of that liquor gave the parrots a flow of spirits. It crept near the fire in winter, and its greatest pleasure, in that season, was to get on the chimney; and when warmed it gave many signs of its comfortable feelings. It had equal pleasure in the summer

showers ; it continued whole hours exposed, and spread its wings in order to receive the rain, and did not seek for shelter till it was wet to the skin. After it had returned to its roost, it stripped all its feathers, one after another through its bill. If the weather was dry, it liked to bathe in a cistern of water, and entered into it repeatedly, though very careful not to wet its head. But it was as averse to plunge in winter ; and if then shown a vessel of water it would run off, and even scream. Sometimes it was observed to yawn, and this was almost always the symptom of weariness. It whistled with more force and clearness than a man ; but, though it expressed many tones, it could never be taught to copy an air. It imitated perfectly the cries of wild and domestic animals, particularly the crow, which it mimicked so well, that it might have been taken for one. It seldom prattled in a room with company ; but if alone in the adjacent room, it was noisy in proportion to the loudness of the conversation which it overheard ; it seemed prompted to repeat precipitately all that it had learned. In the evening it retired of its own accord to its cage, which it shunned during the day ; there with one foot concealed in the plumage, or hooked to the bars of the cage, and its head beneath its wings, it slept until it perceived the dawn of the morning ; but it often awoke at the blaze of candles. Then it stepped down at the bottom of the cage, and sharpened its claws, using the same motion as the scratching of a hen. Sometimes it whistled or prattled in the night when exposed to light ; but in the dark it was silent and tranquil.

A very remarkable instance, is related of a parrot belonging to Mr. Braham of Brompton, which was presented to him by a lady who had bestowed great pains in teaching it to talk. This gentleman had a friend dine with him one day, and after dinner a pause having ensued in the conversation, the guest was startled by a voice proceeding from one corner of the room, calling out in a strong hearty manner, *Come Braham, give us a song.* Nothing could exceed the surprise and admiration of the company. The request being repeated, and not granted, the parrot struck up the first verse of 'God save the king,' in a clear warbling tone, aiming at the style of the singer, and sung it through. The ease with which this bird was taught, was equally surprising with the performance. The same lady taught it to accost Madame Catalani, when dining with Mr. Braham that it so alarmed her that she nearly fell from her chair. On its commencing 'Rule Britannia,' in a loud and intrepid tone, the chantress fell on her knees before the bird, expressing in terms of delight, her admira-

tion of its talents. This parrot has only been equalled in talents by one owned by Colonel O'Kelly of London. Once upon being asked to sing it replied, *I never sing on a Sunday.* 'Never mind that Poll,' the Colonel would say, 'come, give us a song.' *No excuse me, I've got a cold,* it would reply. *Don't you hear how hoarse I am?* This extraordinary bird could perform the three verses entire of 'God save the king,' words and music from beginning to end.

When the Colonel and his parrot were at Brighton, one time, the bird was asked to sing; it answered, *I can't.* Another time it left off in the middle of a tune, and said, *I have forgot.* Colonel O'Kelly continued the tune for a few notes, and the parrot took it up where the Colonel had left off. The parrot took up the bottom of a lady's frock, and said, *What a pretty foot!* The parrot seeing the family at breakfast, said, *Won't you have some breakfast, Poll?* The company mopped it a good deal, and it said, *I don't like it.* It would ask for all that it wanted and apparently with reason. It was purchased at Bristol for 100 guineas. Some persons who were desirous of exhibiting it publicly offered the Colonel 100 guineas a year for the use of it, but he was too much attached to it to accept this offer. Its death was announced in the London Gazette of the 9th of October, 1802. It was dissected by Messrs. Kennedy and Brooke who found the muscles of the larynx, which regulate the voice, considerably enlarged by exercise.

That sort of society which the parrot forms with man, is, by means of language more intimate and pleasing than what the monkey can claim from its antic imitation of our gestures and actions. If the useful and amiable qualities of the horse, or the elephant, command our attention and esteem, the singular talents of the prattling bird sometimes engage more powerfully our curiosity. It diverts and amuses; in solitude it is company; it takes part in conversation, it laughs, it breathes tender expressions, or mimics grave discourse; and its words uttered indiscriminately please by their incongruity, and sometimes excite surprise by their aptness. Willughby speaks from Clusius, of a parrot, which, when a person said to it, 'laugh, Poll, laugh,' laughed accordingly, and the instant after screamed out, *What a fool to make me laugh!* We have the account of another which grew old with its master, and shared with him the infirmities of age. Being accustomed to hear scarce anything but the words, *Je suis malade;* (I am sick;) when a person asked it, *Qu'as-tu, perroquet, qu'as-tu?*

(How d'ye Poll, how d'ye ?) *Je suis malade*, it replied, with a doleful tone, stretching itself over the fire, *Je suis malade*. This play of words without meaning is uncommonly whimsical, and though not more empty than much other talk of another class of bipeds, it is always more amusing. The parrot seems also to receive a tincture of our inclinations and manners ; it loves or it hates ; it has particular attachments, predilections, and caprices ; it is the object of its own admiration and applause ; it becomes joyous or sad ; it is melted by caresses and bills tenderly in return ; in a house of mourning, it learns to moan. The young prince Leo, son of the Emperor Basil, was condemned to death by his implacable father, whom the cries of the persons around him could not move, till, by chance, his parrot repeated several times the words, *Helas ! mon maître Leon*, (Alas ! my master Leo,) which accents stung his barbarous heart and caused him to see his son again, and return to him all his former affection.

The power of imitating exactly articulate discourse implies in the parrot a peculiar and more perfect structure of organs ; and the accuracy of its memory, though independent of the understanding, manifests a closeness of attention and a strength of mechanical recollection which no bird possesses in so high a degree. Accordingly all the naturalists have remarked the singular form of its bill, its tongue, and its head. Its bill, round on its outside and hollow within, has in some measure, the capacity of a mouth, and allows the tongue to play freely ; and the sound, striking against the circular border of the lower mandible, is therefore modified as on a row of teeth, while the concavity of the upper mandible reflects it like the palate ; and hence it does not utter a whistling, but a full articulation. The tongue, which modulates all sounds, is proportionably larger than in man, and would be more valuable, were it not harder than flesh, and invested with a strong, horny membrane.

But this organization, though adjusted with skill, is still inferior to the structure contrived to give an easy and powerful motion to the upper mandible, and, at the same time, not to hinder its opening. The muscles are not fixed to the root, where they should have exerted no force ; nor to the sides, where they would have closed the aperture. Nature has adopted a different plan ; at the bottom of the bill are fixed two bones, which, extending on both sides, and under the cheeks, form a continuation of it, similar in form to the *pterygoid* bones in man, except that their hinder extremity is not concreted into another bone, but loose. Thick layers of muscles, sent off from the back of the head, and inserted in these bones, move them and the bill.

The bill of the parrot is very strong, with which it very easily cracks nuts of the red fruits ; it gnaws the wood, and even bends or wrenches the bars of its cage, if they be slender, or if it be tired of confinement. It uses its bill, oftener than its claws, in climbing and suspending itself ; it also holds by the bill in descending, as if it were a third foot, which steadies its motion ; it also serves to break its fall. It is a second organ of touch, and is equally useful with its toes in scrambling and clenching.

The mobility of its upper mandible gives it a power which no other birds have, of chewing its food. In those, whether of the granivorous or carnivorous tribes, the bill is like a hand which throws the food into the gizzard, or an arm which splits or tears it. The parrot seizes the piece sideways, and gnaws deliberately. The lower mandible has little motion, but that from right to left is most perceptible ; and this is often performed when the bird is not eating, which has made it be supposed to ruminate. In such cases it probably only whets the edge of the mandible, with which it cuts and bites its aliments.

The parrot discovers hardly any choice in its food ; it lives in its native country on almost every kind of fruit or grain. In the domestic state, it eats whatever is presented ; but flesh, which it would rather prefer is extremely hurtful to it, and occasions an unnatural longing which prompts it to suck and gnaw its feathers, and pluck them one by one from every part that its bill can reach. This species of parrot is particularly subject to that disease ; it tears the feathers from its body, and even from its beautiful tail, which never afterwards recovers the same bright red as at first.

Sometimes after moulting, this parrot is observed to become marbled with white and rose color ; occasioned either by some distemper, or by advanced age.

It is uncommon for parrots to propagate in our temperate climates ; but they frequently lay addled eggs. There are some instances, however, of parrots being reared in France. M. de la Pigeonier had a pair in the town of Marmande in Agenois, which hatched regularly each spring for five or six years, and their young lived and were educated by their parents. Each hatch consisted of four eggs, three of which succeeded. They were shut up in a room with nothing but a barrel open at the top and filled with saw dust.

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## CONCHOLOGY.

## NO. VIII.

## OF THE METHODS OF FISHING AND COLLECTING SHELLS.

Land shells are immediately within the reach of the hand of the collector, as well as many sea and river shells, which inhabit shallow waters, or attach themselves to rocks or marine plants on the shores of the ocean. These shells, which are at moderate depths in the sea, are to be collected by dredging. But in whatever way shells are found, those are always to be preferred which still contain the living animal; for then, not only some information may be obtained with regard to its structure and natural history, but the shells themselves are in all their natural beauty, and the full glow of their colors. Those shells too, should be preferred, which are procured from the deeper parts of the ocean, because they have then arrived at the largest size, and are in the greatest perfection. But these are beyond the reach of man, and are only accidentally found on the shores after storms, or attached to sea weeds which have been torn from the rocks by the agitation of the waves.

When shells are found with the animal alive, the method recommended to destroy it and separate it entirely from the shell, is to boil it in water for a very short time, and after allowing it to cool gradually, and to lay it in cold water till it is cleaned. By this process, the attachment between the shell and the animal is destroyed, and the latter, which has become hard and contracted, is easily picked out from its covering. The shell, after this treatment, is ready to be placed in the cabinet, or to be polished in a way we shall hereafter describe, according to the state in which it is found, or the views of the collector.

As the pearl has been held in high estimation in all ages of the world, and as it is an important object of commerce in many countries, the history of the pearl fishery, or of those shell fish which produce the pearl, cannot fail to be interesting.

In different parts of Britain the pearl fishery has been carried on to a considerable extent; and in some places it has been reckoned of such value, that governments have granted the right of fishing to individuals by patent. By a grant of this kind, Sir John Hawkins obtained the privilege of fishing for pearls in the river Irt in Cumberland; and Buchan of Auchmacoy seems to have held, by a similar right, the sole privilege of the pearl fishery near the mouth of river Ythan in Aberdeenshire; for it appears that this grant was resumed by government in 1633, in the first parliament of



Charles I. In the same river, at the distance of 10 miles from the sea, a successful fishery of pearls has been frequently carried on ; and a few years ago, in the river Cluny in the same county, a Jew employed a number of people to collect the muscles which contained them, and some large and valuable pearls were found. Some years ago, in the river Teath in Perthshire, the pearls which were got brought about a 100*l.* sterling to those employed in searching for them, in the course of one season. It was observed, that those muscles only which were crooked and distorted yielded pearls. The method which has been practised on this river for fishing the pearl muscle, is the following. The fisherman provides himself with an instrument formed of two iron plates or spoons, having something the shape of the muscle. Each of these is attached to an elastic handle of the same metal, terminating in an open tube, which is fixed to the end of a long wooden handle. The concave sides of the plates approach each other, and are kept in close contact by the elasticity of the handles. With this instrument the fisherman enters the water, and directs his course to those places which he supposes are resorted to by the muscles. These he discovers with his feet, and having found one, he presses the instrument upon it, the plates or valves of which, in consequence of the elasticity of the handles separate, and then grasp it firmly. In this way he can detach it from the place to which it adheres, and bring it to the surface of the water. The pearl muscle is a native of many other rivers of Scotland, as of the Esk in Forfarshire, where a pearl was found of the size of a pistol bullet, and sold for 4*l.* sterling ; but of the Devon in Clackmannanshire, the Clyde, and of Lock Ken in Galloway, where it is said great numbers of pearls are fished in dry summers, many of which sell from one shilling to one guinea. But the greatest pearl fishery which has ever been established in Scotland, of which there is any record, is that of the river Tay, several years ago. The pearl muscle is found in every part of this river, from its source in Lock Tay, to its junction with the sea. In different parts of the river, but particularly in the vicinity of Perth, we are informed, that not less than 11,000*l.* worth of pearls were sent to London during the year 1761 and 1764. They were sold from 10 shillings to 1 pound 16 shillings per ounce. About this time one pearl was found which weighed 33 grains. This fishery, however, as well as the pearl fishery in other rivers of Scotland, seems to be greatly exhausted, and very probably, as it has been supposed, from the improvident avarice of the undertakers, not allowing the animal to arrive at that age which seems to be necessary for the production of the pearl.

But the pearl fishery of the warmer climates, in different parts of the East Indies, in the gulf of Persia, and the Red Sea, and particularly that which is annually carried on in the bay of Condatchy, in the island of Ceylon, is by far the most extensive and most important of any in the world.

The following account of the pearl fishery at Ceylon is recorded in the Asiatic Journal of the year 1800.

'The person who formed the pearl fishery at Ceylon, last year, was a Tamu merchant, who for the privilege of fishing with more than the usual numbers of donies or boats, paid between two and three hundred thousand porto novo pagodas,\* a sum nearly double the usual rent. His excellency the honorable Mr. North, by the last ships from Ceylon, has transmitted a very minute detail of the fishery in all its stages, some of which are truly singular and remarkable. It appears that the fear of sharks is the cause of a great deal of interruption to the fishery, the divers being extremely timid and superstitious; every one of them, even the most expert, entertain a dread of sharks, and will not on any account descend until the conjuror has performed his ceremonies. This prejudice is so deeply rooted in their minds, that the government was obliged to keep two such conjurors in their pay, to remove the fears of the divers. The manner of the enchanting consists of a number of prayers learned by heart, that nobody, probably not even the conjuror himself, understands, which he, standing on the shore, continues muttering and grumbling from sunrise until the boats return. During this period, they are obliged to abstain from food and sleep, otherwise their prayers would be of no avail; they are, however, allowed to drink, which privilege they indulge in a high degree, and are frequently so giddy as to be rendered very unfit for devotion. Some of these conjurors accompany the divers in their boats, which pleases them very much, as they have their protectors near at hand. Nevertheless, I was told, said Mr. North, that in one of the preceding fisheries, a diver lost his leg by a shark; and when the head conjuror was called to an account for the accident, he replied, that an old witch had just come from the coast, who, from envy and malice, had caused this disaster by a counter conjuration, which made fruitless his skill, and which he was informed of too late; but he afterwards showed his superiority, by enchanting the sharks so effectually, that though they appeared to most of the divers, they were unable to open their mouths. During my stay, continues Mr. North, at Condatchy, no accident of this kind happened. If a shark is seen, the divers

\* About \$444,400.

instantly make a signal, which on perceiving, all the boats return immediately. A diver who trod upon a hammer oyster, and was somewhat wounded, thought he was bit by a shark; consequently made the usual signal, which caused all the boats to return; for which mistake he was afterwards punished. The largest and most perfect pearl taken last season, was about the size of a small pistol bullet.'

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## CABINET CYCLOPÆDIA.

### SILK MANUFACTURE.

#### NO. X.

**CHEMICAL, AND MEDICAL PROPERTIES OF SILK.** 'The coloring matter, which more or less tinges silk with a golden hue, resides in the gum which the silkworm produces in such abundance with the filament, and which exercises so important an agency in facilitating all the preliminary processes of its manufacture.

'If the cocoons be immersed in hot water a portion of this gummy or resinous substance will be dissolved, and will impart to the water a light amber color. If alcohol be employed as the solvent a much larger portion of this matter will be extracted from the silk, and a tincture formed, which will retain its color even after it has been exposed to the rays of the sun for a much longer time than would suffice to bleach the silk itself.

'The knowledge of the fact that this coloring matter has a greater affinity for alcohol than for water led Mons. Baume to adopt the following process for bleaching silk :—

'A stone-ware vessel, of a nearly conical form, and capable of holding about twelve gallons, was provided, having a large opening at the top, and a smaller one, about an inch in diameter, at the bottom. Vessels made of common pottery ware could not be used for the purpose, as they would speedily have been rendered unserviceable by the acid employed in the bleaching. From the same cause, the stone ware even proved to be not very durable. All roughnesses on the inside surface of the vessel, which could have broken the threads of silk, were carefully rubbed down with pumice stone. The small aperture at bottom was closed by a cork, through the centre of which a glass tube, of a quarter of an inch diameter, was passed, and, except at the time when it

was required to draw off the liquid contents of the vessel, this tube also was kept closed by a cork.

‘Six pounds of yellow raw silk were then disposed in the stone ware vessel, and upon this was poured a mixture previously made of forty-eight pounds of alcohol (specific gravity 0.867) with twelve ounces of very pure muriatic acid (specific gravity 1.114.) The vessel was then completely closed, and the whole was left in digestion until the liquor, which at first assumed a green color, passed to that of a dusky brown : this usually happened in the course of twenty-four hours. The acidulated spirit was then drawn off by means of the glass tube, and clean spirit of wine was poured continually over the silk, until the liquid passed off perfectly colorless. The silk was then left to drain without being otherwise disturbed. A mixture of the same quantity of spirit with muriatic acid was then again poured upon the silk, which, after being exposed to its action for a period somewhat longer than the first digestion, proved to be perfectly and brilliantly white. The time required for this second application of acidulated spirit was of less or greater duration, according to the temperature, and the original quality of the silk. Baume found that the bleaching was much more readily accomplished when the cocoons had not been previously baked, for the destruction of the chrysalides. The second dose of liquid was but slightly tinged when drawn off ; and if another portion of acid, equal to half the quantity originally used, were added to it, the mixture could properly be used for the first digestion of a second quantity of the raw material.

‘A further washing of the silk then ensued, by pouring upon it forty-eight pounds of pure unacidulated spirit of wine, which was drawn off in the course of the following day.

‘To recover the quantity of spirit absorbed by the silk, and which was equal to its own weight, small quantities of water were sprinkled over it from time to time, and this process was continued until the liquid, which drained off through the glass tube, had no perceptible strength. Notwithstanding these repeated washings, the silk still retained a portion of muriatic acid, which made it harsh to the touch, and if left in it, would, after a time, have injured its fibre : it was therefore placed in a coarse woolen bag ; and this, being inclosed in a basket, was left for several hours in a stream of running water, which effectually washed out the acid.

‘Pieces of manufactured silk, and even made-up garments, have been successfully bleached by this process.

‘The spirit may be recovered by saturating the mingled acid with potass, or lime, and then distilling the spirit in a copper

alembic. Mons. Baume says that silk may be thus made to rival or even to surpass in whiteness and lustre the finest specimens from Nankin.

‘The revenue regulations, and the dearness of spirit, make the above process impracticable in England, where the usual method of bleaching raw silk is to immerse it in a boiling solution of good soap in river water. After boiling for two or three hours the silk is taken out, beaten, and then rinsed in cold water; when this has been sufficiently performed, it is slightly wrung, then put into cold soap and water, tinged with a minute portion of indigo, and again boiled. On removing the silk from this second water, it is wrung as dry as possible with the assistance of wooden pegs, and is then well shaken to separate the threads: after this it is suspended in a kind of stove constructed for the purpose, which contains sulphur in a state of combustion; the fumes arising from this give the last degree of whiteness to the silk, and the process is completed.

‘Silk is powerfully acted upon by nitric acid. If two drachms of this acid are mixed with a pint of alcohol, and silk, either raw or bleached, be immersed in it, and kept in digestion exposed to a moderate heat for twenty-four hours, the silk becomes of a dull yellowish brown, which, after it has been washed with soap, rinsed, and dried, turns to a fine golden yellow color, which is very permanent. Concentrated nitric acid being distilled of silk, and the remaining liquor partially evaporated, oxalic acid is obtained: if the evaporation be pursued still farther, the residue will yield, together with a small portion more of oxalic acid, a quantity of yellow crystals, not in the slightest degree acid, but intensely bitter, and which stain the skin of a deep yellow color, not easily removed. This curious substance was discovered by Welter, and was called by him the “bitter principle.” He supposed that its production always results from the action of nitric acid on animal matter. These crystals, when examined through a magnifying glass, appear to be composed of truncated octahedrons.

‘If the remaining liquor be previously saturated with potass and evaporated, another yellow silky salt separates, which detonates on burning coals like nitre, and appears to be a triple combination of the before mentioned bitter substance with nitrate of potass.

‘The water wherein the cocoons are placed to prepare them for reeling, quickly acquires from them so much of the resinous matter as to be more viscid than the strongest soap lather. Chappe found that he could inflate this water into bubbles or

small balloons, which were far more permanent than any formed of soap and water, and which equally exhibited the prismatic colors. The texture of these bladders was so tenacious, as to render them impervious to the most subtle gas. Chappe filled several of them, whose diameter did not exceed three inches, with hydrogen gas, and the little air balloons remained unbroken and floating in his apartment for considerably more than twenty-four hours. All cocoons are not sufficiently glutinous for this purpose ; with those which are of a very deep yellow the experiment will not succeed : such are supposed to be produced by the worm in a peculiar state of disease, which state is yet by no means uncommon.

According to Westrum, silk, when acted upon by chlorine, either in the gaseous form or diluted in water, instead of being bleached, as cotton or linen would be, always becomes of a yellow color, and loses part of its solidity. The caustic alkalies corrode and dissolve silk, which give by distillation the results usual with animal substances.

Neumann found that but few materials afforded an equal quantity of volatile alkali. Tournefort observes that it contains more than hartshorn, as he obtained from fifteen ounces of silk two drachms of volatile salt : this, which was called the spirit of raw silk, when rectified with some essential oil, was the medicine formerly celebrated under the name of "*Guttæ Anglicanæ*," or English drops. The volatile alkali obtained from silk was then supposed to be of a different nature from that contained in any other substance, and it consequently was held to possess different virtues peculiar to itself. So salt of tartar, and sub-carbonate of potass, were for a long time considered to be, and were, used as two separate substances. The chemical philosopher had not then learned to generalize, and could not understand that the same substance, differing in no one particular as to its nature and properties, could be obtained from many apparently wholly dissimilar bodies.

Before the discoveries of chemistry had arrested the fanciful flights and annihilated the quaint distinctions of the druggist, his catalogue presented a curious nomenclature, which is now acknowledged to have been founded on ignorance and prejudice. The light of science has since pierced the veil, and has revealed many of the laws of nature in all the beautiful simplicity of their elements ; dispelling much of the complicated mystery and vague obscurity which then enveloped the ill-understood practice of pharmacy.

A silk covering of the texture of a common handkerchief is

said to possess the peculiar property of resisting the noxious influence and of neutralizing the effects of malaria. If, as is supposed, the poisonous matter is received into the system through the lungs, it may not be difficult to account for the action of this very simple preventive : it is well known that such is the nature of malaria poison, that it is easily decomposed by even feeble chemical agents. Now, it is probable that the heated air proceeding from the lungs may form an atmosphere within the veil of silk, of power sufficient to decompose the miasma in its passage to the mouth ; although it may be equally true that the texture of the silk covering may act mechanically as a non-conductor, and prove an impediment to the transmission of the deleterious substance.

‘ We learn from Pomet’s history of drugs, that silk was in his time used as a medicine, by reducing the pure part of the cocoon into a powder. His volume contains many copious directions for preparing this powder, and for duly and carefully separating the chrysalis from the part which he considered medicinal. Silk thus prepared has, as affirmed, “ the virtues of cleansing the blood, making the spirits brisk, and the heart pleasant.” Lemmery, the editor and commentator of Pomet, adds, that the silkworm itself likewise possesses medicinal properties. According to its information, silkworms that had been dried into a powder and applied upon the head, which should be previously shaved for the reception of this plaster, were esteemed extremely efficacious in curing the vertigo.

‘ The imperishable nature of silk, even under circumstances peculiarly unfavorable to the preservation of animal substances, forms another of its qualities which is deserving of remark. Some years ago, the sexton of the parish of Falkirk, in Stirlingshire, upon opening a grave in the churchyard, found a riband wrapped about the bone of an arm, and which, being washed, was found to be entire, and to have suffered no injury, although it had lain for more than eight years in the earth, and had been in contact with a body which had passed through every stage of putrefaction, until it was reduced to its kindred dust.’



## THE YOUNG LADY'S BOOK.

NEW EDITION.

The Young Lady's Book : A Manual of Elegant Recreations, Exercises, and Pursuits. Third American Edition. Boston : A Bowen, and Carter, Hendee and Co. 12 mo., 1832.

[WHEN we say that this is the handsomest book ever printed in America, we will assure our readers that we speak of one of its slightest merits. The choice selection of its subjects, the extreme neatness and just execution of its embellishments, and the purity and simplicity of its style, render it alike useful, instructive, and delightful. It is truly said of the English copy, by the London Literary Gazette, that, 'a few years ago, all the talents of England could not have produced such a work.' It is no less calculated to be valuable to the student of nature, than to be a distinct chart of the useful and ornamental departments of a lady's education. 'Instead of being an *Annual* flower, to bloom and be forgotten, it aspires to be a *PERENNIAL*, an *Evergreen*, that shall form a suitable memorial for all seasons and all times.' The following extract will perhaps better show the object of the work and imperfectly serve as a specimen.]



THE CABINET COUNCIL.

Seated in front of a splendid specimen of the ingenuity of the Chinese,—a gilt and richly inlaid table, covered with a variety of beautiful minerals, shells, and articles of virtù,—the Editor, after having been duly announced by Prudence, her bower-woman, found his cousin Penelope, on his entrance into Lady Mary's brilliant boudoir. Lady Mary was standing attired for a ride, near her fair kinswoman ; and Aunt Elinor, the very pearl of the ancient sisterhood of spinsters, entered the apartment before the usual greetings were concluded.

'Your cousin, young ladies,' said Aunt Elinor, 'wishes to look round Lady Mary's boudoir again, to see if anything has escaped his notice.'

This was a very mysterious announcement. 'Lady Mary, after looking earnestly, first at her aunt, and then at Penelope, as if she were desirous of reading an explanation in their eyes, exclaimed: 'Escaped notice, aunt! I cannot conceive what you mean.'

'Why, it would seem, child,' was the old lady's reply, 'that the arrangement and decorations of your boudoir, have, in some degree attracted his admiration; although for my own part to speak candidly,—and you know I love you equally,—Penelope's seems to me by far the more preferable of the two; indeed, with one or two alterations, it might be pronounced perfect.'

'The fault of Penelope's boudoir,' said Lady Mary, 'is superlative neatness: it looks as prim as herself; casting a glance round it, your first feeling of admiration at its order is subdued in an instant, by a disagreeable conviction of the pains it must have cost her to drill her little squadrons of embellishments so as to produce such an effect. My dear Pen! you may smile, but you are positively as precise as a mathematician: old Euclid seems to have been school master to the Graces who preside at your toilet. But would you believe it?' added the lively Lady Mary, turning to the Editor, 'notwithstanding she dresses in drab, and looks demure, cousin Penelope, Sir, I can assure you, is as brilliant as possible on a birthday; for when she does condescend to be splendid, I must confess, that few, if any of us, eclipse her.'

'Yet allow me to remark,' said Penelope, 'that the rich and profuse negligence which reigns in your boudoir is the result of thrice the toil that I have employed in decorating mine.'

'That is true enough, Penelope,' said Lady Mary, while a slight blush tinged her cheek; 'but the toil you speak of is not apparent. I look upon my boudoir (pardon the comparison) as upon a fine picture, in which those splendid dashes of light, which charm us,—those fine touches of brilliant beauty that seem to fall from a mass of foliage to gild the bold edge of a ruin, and finally descend to illuminate and ennoble a daisy,—appear to have been the work of a moment;—

'Or, to help you with a more high-flown simile, Lady Mary,' said her cousin, who was now turning over a portfolio of engravings, 'they seem to have been produced by the Muse of Painting, at a single dash of her brush newly dipped in the fountain of light!'

'And yet,' continued Lady Mary, smiling at Penelope's simile 'they are, in fact, produced only by labor, both of the mind and the hand. This apparent carelessness of arrangement has, I admit, cost me considerable pains; but everybody admires the ef-

fect, because the art which produced it is concealed. Here, for instance, in this recess, is a beautiful cabinet picture,—a charming landscape, partly veiled, but not hidden, by a common, but, in my opinion, remarkably elegant creeping-plant, which extends far enough round the corner to twine about the carved ebony frame, and festoon the polished surface of an old-fashioned glass, which I prize because it was my grandmamma's : here again, you may perceive it wandering downward, and encircling a fossil ; on the other side of the window it has attached its tendrils to a tall and stately exotic, and droops from its topmost flower to garland a Greek vase. Now, although this appears to be all the result of pure accident, Penelope, who is smiling at my comparison, will tell you 'twas I that did it. And do not imagine, I pray, that everything here is in such a chaotic jumble as to be inconvenient ; there is, in fact, order in its seeming confusion ; I have a clue to the labyrinth, and can find a book or a butterfly in my boudoir quite as soon as Miss Penelope can in hers. Candidly speaking, which do you prefer ?

'To me,' replied the Editor, to whom this question was addressed, 'they appear to be exquisite specimens of the different styles to which they belong. Like every other boudoir that I have seen (although all bear a faint sort of family resemblance to each other,) each is apparently embellished according to the judgment of its fair owner, of whose taste and habits it might be taken as a symbol.'

'That is precisely as I think,' remarked Penelope.

'Then, my dear,' replied Lady Mary, 'notwithstanding your reputed wisdom, I must respectfully submit,—as I am told the lawyers say, when they contradict the court,—that you are partially in error. Of a lady's taste, her boudoir may sometimes, but not always, be a visible criterion. She may possess the taste of one of those select few, on whom Apollo has shaken a dew-drop from his laurel, and yet have as little means of gratifying it as poor Cinderella, before she had a little fairy glass-bower for a shoemaker: she may also be gifted with pure taste in an equal degree, and have a kind Cræsus for a relative to allow her an unlimited account at Coutts's and yet be possessed with a sister sprite to that which nestled in the heart of an Elwes or a Dancer. That a boudoir is not always a proof of the habits of its owner, I positively confess mine to be an instance:—those specimens of minerals are very rare and valuable,—at least, so says Penelope,—but they never struck me as being beautiful, and she knows I am little more acquainted with Mineralogy, than with the grammar of the Moslems. But to waive the question as to

the superiority of Penelope's boudoir to mine, or mine to hers, allow me to ask, why my brave cousin, who sits smiling at our debate, is so anxious that nothing in my pet apartment should escape his notice?

'I will endeavor to satisfy you on that point,' said the Editor. 'About two years ago, while seated in this identical chair, I conceived the idea of producing and publishing a work that should be deemed worthy of the acceptance of every young lady in the kingdom.'—

'I hope you do not intend to inflict another Annual upon us,' said Penelope.

'By no means,' replied the Editor; 'so far from following the beautiful, but much-beaten track of my predecessors, it is my intention to offer the present-giving public PERENNIAL,—an *ever-green*, that will not be merely looked at, and laid aside forever, but will attract notice and merit attention at all times and at all seasons;—not such a mere bouquet of flowers as, however, rare or beautiful, seldom tempt their warmest admirers to a second inspection, and which are always dethroned, even if they hold their ephemeral sway for a year, by other blossoms, presented by the same hands, at the return of the book-budding season;—

'But,' interrupted Aunt Elinor, with more enthusiasm than usually beamed on her placid countenance,—'to drop my nephew's flowery metaphors,—a volume which, although rich in beautiful embellishments, shall be so useful and instructive, as well as amusing, that it will, in all probability, be as often in the hands of every young lady of sense who possesses it, three or four years hence, as within a month after its publication.'

'That is exactly my meaning,' said the Editor, looking gratefully towards Aunt Elinor; 'and I sincerely trust I have been fortunate enough to accomplish so desirable an object.'

'And pray, cousin,' inquired Penelope, 'what is the book to contain?'

'If you require a view of the contents,' replied the Editor, 'I have only to say, look around you!—Lady Mary's boudoir would form a very good index to the volume, and present a capital epitome of a young lady's best pursuits, exercises, and recreations. Flora has here a number of living representatives; Gnomes, in bronze, seem to bend beneath the weight of the minerals which are placed upon their shoulders; a sea-maid with her conch, illumines the apartment when 'Night hath drawn her vail o'er earth and sea;' the insect world is represented by groups of Oriental beetles, and splendid butterflies; the humming-bird is here, with many other of his fellow-tenants of the air, making all

around them look dim by the metallic lustre of their plumage :—all these remind me of sciences which are applicable to the study of young ladies;—I have made a ‘prief of it in my note-book;’ and introductory papers on Botany, Mineralogy, Conchology, Ornithology, and Entomology, have been the consequence.’

‘Then there is some probability,—as, of course, I shall have the work,’ said Lady Mary, ‘that ere long I may know something of two sciences, of which, although they are represented in my boudoir, I am now altogether ignorant.’

‘One of them, I know,’ said Penelope, ‘is Mineralogy; and I must confess it surprises me that it should never have attracted your favorable notice. If minerals were only to be seen in mines,’ she continued, ‘it would be a different case; but they have, for years, been mutely pleading to you in their own behalf: they meet your view on all sides; many of them even in a native state. They contribute essentially to our comfort, and add to our splendor: they embellish the lofty domes and high places which are the pride of our country, and passively contribute to its defence: they adorn our parlors and our persons: some of them are almost indispensable even to the cottager’s wife; while others sit enthroned on the brows of royal beauty, exceeding all beneath ‘the Lady Luna and her silvery train’ in brilliancy, and equalling the chaplet with which Flora would bedeck herself, in richness and variety of hue; and although they possess not the fragrance of the rose-bud, nor the graceful form of the lily, their durability exalts them to a higher value than that of the most lovely flower that basks in the noon-tide ray, or blooms in the shade. The snowdrop melts away almost as soon as the white mantle that covers its birth-place; the violet delights our eye in the morning, and is withered by sunset; the queen of flowers endures but for a brief period, and there are few of her subjects hardy enough to bear the scorching glance of a summer sun, and the chill breath of winter: but a diamond endures for ages, and is brilliant and beautiful at all times and in all seasons; the ruby outlives a thousand generations of roses; and the holly and the laurel are ephemeral, compared with the emerald.’

Lady Mary was rather surprised at the unusual enthusiasm of Penelope; without, however, waiting to make any remark upon her cousin’s poetical style of speaking, she placed her hand upon Penelope’s bracelet, and begged to interrupt her oration in favor of the mineral world for a few moments, by offering a short plea on behalf of the subjects of Flora. ‘You must, I am sure,’ said she, ‘however warmly you may be attached to your pet science, allow that flowers have one great advantage over minerals;—the

latter are dead, but flowers live. We can sow their seeds, and watch them breaking through the earth, and rear them into beauty and perfection. We have sympathies in their favor: they languish beneath intense heat, and are chilled by the cold easterly blast; they flourish for a time, and then fade away like ourselves: but the gem dies not: its duration, for ought we know, may reach to the extent of time. Some may admire it for its beauty, and others doat upon or covet it for its value; but it has never that pure hold on our affection, which the flower, we nourish possesses. Besides, there are thousands of delightful associations connected with flowers and shrubs. The imagination of the painter, or the poet, never conceived a more exquisite picture of beauty than the dove of the ark gliding towards Ararat with the olive-branch, over the still, solitary, measureless surface of the waters, gazing down upon its own shadow, and listening to the music made by its own wings. Lectures on history, manners, or even mythology, might be given with no text but a leaf or a flower. With a white and red rose before him, the historian might comment upon the old English wars between the houses of York and Lancaster; a bouquet of Eastern flowers would recall to the traveller's memory some dark-eyed maiden of Persia, whom he had seen committing to the charge of a pigeon,—swiftest of messengers,—a billet composed of buds,—the accepted symbols, in her father-land, of hope, joy, grief, reproach, or affection; and the humble daisy of the mead might give a hint to those learned in antique lore, to depict Proserpine gathering flowers in the vales of Sicily, unconscious of the approach of gloomy Dis: a good homily, too, might be written upon a violet.

‘What you have said is very true, Lady Mary,’ replied her cousin; ‘but the mineral has also its associations: it possesses a greater individuality of interest, in this respect, than the flower. You may show me a rose of the same species as those worn by the princely Plantagenets, but it is not the same rose. The flower perishes before the hand that gathers it is cold; but the mineral’s duration affords scope for the imagination to roam as far as the border-land of the probable and the possible. The wise may smile at me for indulging the feeling, or making the confession but I have often detected something akin to awe creeping over me when gazing upon a gem:—it may have sparkled on the arm of Cleopatra, as she sailed down the Cydnus; or enriched the crown of Semiramis, or the girdle of a Ptolemy; or been worn by the Theban mummy that was embalmed three thousand years ago, and after that immensity of time, is brought to revisit the glimpses of the moon, to be gazed and wondered at by those who

have been, comparatively speaking, but just ushered into life. It may be, I have thought, when looking at an amethyst, that thou wert once contemplated by Pliny, and wilt be looked upon, a thousand years hence, by some one abiding in what are now the wilds of the New World, but then the heart of a populous city, and the mistress of the earth, with feelings precisely similar to my own! And what a harvest of rich recollections may be gathered from the sight of a suit of family diamonds! At how many birth-days have they been admired! How many brows have they adorned! The hoops and furbelows with which they were once accompanied; the myriads of fashions,—nay, whole generations of their wearers,—have passed away and are forgotten; their names are only found on musty parchments, pedigrees, or monuments: but the diamonds are the same; brilliant as ever, they mock their transient wearers by their durability,—sparkling on the bosom of the Lady Jane of to-day, as they will, in all probability, sparkle on the brow, the wrist, or the zone, of some equally young and admired Lady Jane, some centuries to come. They have been in a side-box when Garrick played Richard, and will be worn, it may be, at the performance of some Cherokee Roscius a thousand years hence.'

'Why Pen!' said Lady Mary, almost staring at her cousin, 'I never heard you talk at this rate, and in this style, before. What has possessed you?'

'Simply a desire to make a fellow-student. I have merely adopted your own manner, because I thought it would be more likely to attract you, than the usual plain undrum level of my discourse. You look as though you were astonished, that your Cousin Pen could mount the stilts, or rise into heroics; but, believe me, coz, 'an thou'lt mouth, I'll rant as well as thou.'

'The other science,' said the Editor, 'to which, I imagine, Lady Mary alluded, is Ornithology. It is certainly my intention to admit the class-mates of the humming-bird, with those of the nautilus, the butterfly, the emerald, and the rose. The mineral and vegetable kingdoms have each been so finely advocated, that it would be superfluous in me to utter a sentence in their favor. You are both, I know, very much attached to Conchology and Entomology. The degree of eloquence either of you might display, in defence of those sciences, may be easily imagined, on considering for a moment the fertility of the theme. There is a fine halo of poetry in the imagination, round the conch, the nautilus, and the pearls, as well as the lily and the amethyst; and it cannot be denied that the insect world is endowed with as much beauty as, and more interest than, either the rose or the diamond.



If Lady Mary ground her strongest plea in favor of flowers on their vitality, how much more powerfully may we, on the same score, advocate the cause of the butterfly! There is nothing so admirable in the operations of nature, 'within the bourne of Flora's reign,' as the metamorphosis of an insect—its gradual development and advance through various stages of existence, until it emerges from a tomb constructed by itself, endowed for the first time with the means of soaring into the air. And what can the mineral or vegetable kingdoms afford so attractive to the inquiring mind, as the singular habits and instincts of many insects, and of several of the animals, which, like 'the hermits of fairy-land, abide in pearly grottoes on the shores of Oceanus?'—but notwithstanding the potent claims on our attention of the insect, the shell, the mineral, and the flower, it is a matter of doubt whether any of them be more worthy of our investigation than birds. The forms of an immense number of birds are remarkably graceful; the plumage of many exhibit tints as rich, brilliant, and diversified, as can be found in the entire range of animated nature; their structure is various, and, in all cases, admirably well adapted to their wants and habits. Their utility to mankind is obvious: they afford us articles of ornament as well as of use: the plume of the ostrich is associated, at the toilet, with the flower, the gem, the pearl, and the produce of the silkworm; to neither of which are we indebted for such important benefits as have been afforded us by the quill of the goose. The nidification of many birds is quite as ingenuous as that of insects; their migration have attracted the notice of philosophers for ages past; and their familiarity in a domestic state, and the affection they display toward their nestlings, elevate them, as objects of human interest, above all the other classes of creation which we have noticed.

'Your remarks,' said Aunt Elinor, 'appear to me to be very correct: and you act discreetly in suffering Ornithology to occupy a niche by the side of her sister sciences. Thus far would I go, but no farther.'

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#### L'OVERTURE.

Here, in this classic bower,—the Muse's home,—  
 Fair Science sits upon a throne empearl'd;  
 And, at the waving of her wand, a Gnome  
 Reveals the treasures of the mineral world.

Her silver bow Latona's daughter bends ;  
Young Music, heav'nly maid ! assumes the lyre ;  
Terpsichore her glad assistance lends ;  
And Painting's charms the youthful soul inspire.

Here, Flora reasons on a budding rose ;  
Lorn Philomel a learned treatise sings ;  
While purple moths their graceful forms disclose,  
With lectures woven on their gorgeous wings.

Minerva and the Graces here display  
The charms of taste with wisdom's lore combin'd ;  
And willing Sylphs their various arts essay,  
To raise, improve, and gratify the mind.



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**SPURZHEIM'S PHRENOLOGY.**

[*Outlines of Phrenology*, by G. Spurzheim, M. D. of the Universities of Vienna and Paris, and Licentiate of the Royal College of Physicians of London. Being also a manual of Reference for the marked Bust. Boston: Marsh, Capen and Lyon. 18mo. pp. 96. 1832.

This little book contains a brief but comprehensive view of the elementary notions of Phrenology and will impart much information to those who are in pursuit of the science, particularly those who attend the Author's Lectures.

We are happy to understand that some of his most important works will shortly be published by Marsh, Capen & Lyon, in this City.

He has also, caused to be prepared, at a moderate price, some casts and busts, illustrative of the science which will greatly facilitate the student in his progress.

His lectures are numerous and well attended by the most learned portion of our community, and have, as yet, been highly instructive and satisfactory. We shall in some future number endeavor to make an abstract of them with some remarks from other sources.

# METEOROLOGICAL JOURNAL,

KEPT AT BOSTON, FOR AUGUST, 1832.

[From the Daily Advertiser.]

THERMOMETER.			BAROMETER.			FACES OF THE SKY.			DIRECTION OF WINDS.			RAIN.
Day.	Morn.	Noon.	Morn.	Noon.	Even.	Morn.	Noon.	Even.	Morn.	Noon.	Even.	Inches.
1	66	65	30.18	30.15	30.17	Cloudy	Cloudy	Cloudy	S. W.	N. E.	S. W.	0.16
2	64	74	30.18	30.18	30.18	Cloudy	Fair	Fair	S. W.	N. E.	S. W.	0.68
3	66	80	30.18	30.12	30.10	Rain	Fair	Fair	S. W.	N. W.	S. W.	0.15
4	61	81	30.09	30.05	30.05	Fair	Cloudy	Fair	S. W.	N. W.	S. W.	0.73
5	75	81	30.06	30.08	30.08	Cloudy	Rain	Cloudy	S. W.	N. W.	N. W.	0.19
6	68	76	30.12	30.12	30.12	Cloudy	Fair	Rain	S. W.	N. E.	S. W.	0.09
7	66	82	30.12	30.12	30.06	Cloudy	Fair	Rain	S. W.	N. E.	S. W.	1.57
8	71	82	29.96	29.96	29.96	Cloudy	Rain	Rain	S. W.	N. E.	S. W.	0.19
9	72	72	29.96	29.79	29.90	Cloudy	Fair	Rain	S. W.	N. E.	S. W.	0.09
10	66	78	30.12	30.20	30.35	Rain	Fair	Fair	N. E.	N. E.	N. W.	0.19
11	62	74	30.12	30.20	30.35	Fair	Fair	Fair	S. W.	N. E.	N. W.	0.19
12	61	80	30.28	30.28	30.35	Fair	Fair	Fair	S. W.	N. E.	N. W.	0.19
13	69	83	30.28	30.28	30.27	Fair	Fair	Fair	S. W.	N. E.	N. W.	0.19
14	70	87	30.20	30.18	30.13	Fair	Fair	Fair	S. W.	N. E.	N. W.	0.19
15	72	86	30.10	30.02	29.79	Fair	Cloudy	Fair	S. W.	N. E.	N. W.	0.19
16	75	70	29.92	30.00	30.09	Cloudy	Cloudy	Cloudy	S. W.	N. E.	N. W.	0.19
17	86	62	30.05	30.12	30.18	Rain	Fair	Fair	N. E.	N. E.	N. E.	0.41
18	85	64	30.21	30.22	30.22	Fair	Cloudy	Fair	N. E.	N. E.	N. E.	0.41
19	88	62	30.13	29.99	29.93	Rain	Fair	Rain	N. E.	N. E.	N. E.	0.41
20	86	73	30.08	30.12	30.20	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
21	62	76	30.20	30.12	30.11	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
22	62	78	30.03	30.02	29.98	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
23	70	82	29.90	29.92	29.93	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
24	66	79	29.97	29.97	29.98	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
25	50	62	30.01	30.01	30.08	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
26	48	71	30.08	30.08	30.07	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
27	57	72	30.10	30.10	30.11	Fair	Fair	Fair	N. E.	N. E.	N. E.	0.41
28	62	72	30.13	30.13	30.19	Cloudy	Fair	Fair	N. E.	N. E.	N. E.	0.41
29	63	79	30.20	30.20	30.13	Cloudy	Fair	Fair	N. E.	N. E.	N. E.	0.41
30	62	76	30.10	30.00	29.92	Cloudy	Cloudy	Cloudy	N. E.	N. E.	N. E.	0.41
31	63	76	30.10	30.00	29.92	Cloudy	Cloudy	Cloudy	N. E.	N. E.	N. E.	0.41

Depth of rain fallen 5.61 inches.

Hours of observation, at sunrise, 1 o'clock, and 10 P. M.